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EXAMINER

LEE, CHEUKFAN

ART UNIT PAPER NUMBER

2622

DATE MAILED: 05/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/679,494

Applicant(s)

PILU ET AL.

Examiner

Cheukfan Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-19 is/are allowed.
- 6) ☒ Claim(s) 1-6 and 20-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. Claims 1-25 are pending. Claims 1, 3, 7, 17, 20, and 25 are independent.

2. The specification is objected to for the following reasons:

Page 19, line 20, should "can" be deleted ?

Page 20, line 18, "user interface 408" should read – user interface 308 --.

Applicant should review the specification for such minor errors.

3. Claims 5 and 20-24 are objected to.

Claim 5 depends on "claim 3". However, the basis for "said step of rotating" is set forth in claim 4, not claim 3.

In claim 20, language for "a user interface for activating ..." is not grammatical. Please note the "wherein ..." clauses.

Claims 21-24 are objected to as being dependent upon objected base claim 20.

In claim 23, in the language for "a visual display representing ...", "a first step" should read – for a first step --.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 2, 20, 21, and 25 are rejected under 35 U.S.C. 102(e) as being anticipate by Toyoda et al. (U.S. Patent No. 6,507,415).

Regarding claim 1, Toyoda et al. discloses all subject matter claimed. Toyoda et al. discloses an image processing device and an image processing method for scanning a large original having a physical area greater than the scanning area of the scanner (1) (col. 9, line 15 – col. 16, line 9, especially col. 10, line 57, col. 11, lines 12 and 67, col. 12, line 40, col. 13, line 35, col. 14, line 2). The device includes a scanner (1), a processing section(s) (2, 4, 5, 7, 9, 10), at least one memory (3, 6, 8, 12). The device operates in any one of two modes inherently selected by the user, the ordinary mode used with originals which fit within the maximum size which can be scanned in a single scan by the scanner (1), and a joining mode used with originals which exceed the maximum size. In the joining mode, a large original G is scanned in two scans. In the first scan, a first original portion G1 of the original G positioned on the scanner is scanned, producing a first original image data G1'. The original G is rotated 180°, and a second original portion G2 positioned on the scanner is scanned, producing a second original image data G2' to be joined with the first original image data G1'. Both data G1' and G2' are converted to digital image data. In the exemplary embodiment, the image data G1' and G2' are referred to as search image data and reference image data, respectively. The first image data G1' is processed to adjust the scale of the first image by reducing the size of the first image (to ½, ¼, or 1/8 of the original size) (col. 13, lines 30-45). Scaling of an image includes reduction of the image and enlargement of the image. The first image data G1' is processed in mid-processing section (4) and

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matching data producing section (5) to detect the features of the first image data (col. 12, lines 15-39). The second image data G2' is also processed to adjust its scale by reducing the size of the second image data (col. 12, lines 40-60). After the matching data of the first and second image data are produced, the first image data and the second image data are joined (combined) in the joining section (9) to produce image data of a combined full image (col. 12, line 65 – col. 13, line 5, col. 15, lines 47-51).

Regarding claim 2, the step of waiting for a user input after the capture of the first image data is inherent since, as discussed for claim 1 above, after the first scan, the original G has to be rotated 180° by the user and positioned on the scanner for the second scan to capture the image data of the original portion G2.

Regarding claim 20, the image processing device comprising a scanner and at least one memory discussed for claim 1 above further comprises a detector (charge-coupled device CCD) for capturing an image as claimed (col. 9, line 23), and an inherent user interface for activating the detector (CCD) to perform a series of image data capture operations (the joining mode, Figs. 2(a) to 4(b)) (col. 10, line 38 – col. 11, line 15). The number of image data capture operations for a large original can be two (two scans) or three (three scans) (col. 11, lines 55-65). The processor (processing sections 4, 5, 7, 9) processes a plurality of successive images from the two scans or the three scans of the large document to combine the successive images into combined image data representing a full image of the original. Please also refer to discussion for claim 1.

Regarding claim 21, the inherent user interface discussed for claim 20 inherently comprises a plurality of switches operable by a human hand (col. 10, lines 38-48). Note the switching between the ordinary mode and the joining mode.

Regarding claim 25, the claim recites further limitations of the data processor, in addition to all limitations of claim 20 discussed above. The further limitations of the data processor, i.e., the data processor adapted as "an image processor for processing a succession of said captured images to combine ...", "a feature detector ...", a matcher for matching ...", and "a data combiner for combining ..." are also discussed with reference to Toyoda et al. above in the discussion for claim 1. Thus, Toyoda et al. meets all limitations of claim 25.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toyoda et al. (U.S. Patent No. 6,507,415).

Regarding claims 22-24, Toyoda et al. discussed for claim 20 with respect to the first embodiment of Toyoda et al., further discloses a user interface (Fig. 24) in the third embodiment (col. 33, lines 10-47). The user interface (Fig. 24) comprises a dialogue box displayed on a visual display unit. The dialogue box comprises icons selectable by

the user. The visual display shows icons for positioning of and activating a document for a first step of a two-step image capture process and for activating, operating and positioning of the document for a second step of the two-step image capture process. As discussed for claim 20, the number of image data capture operations for a large original can be two (two scans) or three (three scans) (col. 11, lines 55-65). The processor (processing sections 4, 5, 7, 9) processes a plurality of successive images from the two scans or the three scans of the large document to combine the successive images into combined image data representing a full image of the original. The number of scans of the large original is two. In a condition that the number of scans for the large document is three, one of ordinary skill in the art would have understood that an icon for selecting a three-step image capture process necessary. Using the technique of Toyoda et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide in the display unit an icon or icons for selecting and activating a three-step image capture process and related operations in the three-step process in order to better assist the user when a three-step image capture process is to be selected.

Further, although the user interface features discussed for claims 22-24 are taught by Toyoda et al. in a separate embodiment, the third embodiment, than the first embodiment which the rejection of claim 20 relies upon, because one of the difference between the first and the third embodiments is that the image processing device (having the scanner and inherent user interface) in the first embodiment is applied to the apparatus in the third embodiment, which is a digital image forming apparatus

comprising the functions of a copying machine, facsimile and printer (col. 21, lines 45-52), one of ordinary skill in the art would have realized the benefit of employing the user interface of the third embodiment (Fig. 24, col. 33, lines 20+), which is to better assist the user. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the user interface of the third embodiment as modified in the previous paragraph, to better assist the user.

8. Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arai (U.S. Patent No. 5,517,319).

Regarding claim 3, Arai discloses a method and scanner for scanning a large original having a physical area greater than the scan area of the scanner. The large original is scanned in a plurality of scans (Figs 8(a) to 8(d)). The scanner has a scan area of a rectangular shape, which reads on the claimed image capture area of a first substantially quadrilateral shape having a first and second shorter edges and third and fourth longer edges. The large original or document being scanned also has an area of a rectangular shape, which reads on the claimed document image area having a first and second shorter document edges and third and fourth longer document edges.

In scanning the large document, the document is positioned on the scanner board in a first orientation relative to the scanner board, and a portion of the document is scanned (Fig. 8(a)). The document is moved to another orientation relative to the scanner board, and another portion of the document is scanned (Fig. 8(b), 8(c), or 8(d)). Note that the orientations of the document shown in Figs. 8(a) to 8(d) are different from

each other (one another) relative to the scanner board on which the document is positioned, just as how orientation is defined in Applicant's specification with reference to Figs. 5-7 and 12 (pages 21 and 25). The large document is first positioned on the scanner board with one of the short edges substantially abutting the first edge of the scanner board (Fig. 8(a)). The scan start key (401) is pushed to scan the portion of the document (col. 4, lines 52-60). The document is then repositioned relative to the scanner board and at a different orientation (Figs. 8(b), 8(c), or 8(d)), and then the start key (401) is pushed to scan another portion of the document (col. 4, line 65 – col. 5, lines 1, 18, and 52-60).

With regard to the claimed "a second image data of said document which overlaps said first image data" recited at the end of claim 3, in the exemplary embodiment (Figs. 8(a) to 8(d)), the document area is much larger than the scanner board area. That is because in this exemplary embodiment a document of size A1 is used on a scanner board having a maximum reading size of A3. Arai emphasizes that this is just an example with these assumed conditions (col. 4, lines 33-39). That means the scanner of Arai is capable of scanning large document larger than the scanner board area but smaller than the size of an A1 document. In this condition, one of ordinary skill in the art would have realized that there is an overlapping area between the first and second portion (or other portion(s)) being scanned. Therefore, it would have been obvious to employ the scanner of Arai to scan a large document of a size larger than the scanner board area but smaller than an A1 document size such that the

different portions being scanned overlap each other (or one another) as claimed in order to reproduce documents of different sizes.

Regarding claims 4 and 5, the first and second edges of both the document and the image capture area are the short edges. In repositioning the large document for scanning another portion of the document (Fig. 8 of Arai), the document is rotated by 180° such that the second edge (short edge) (the edge near the bottom of letter A) substantially abuts the first edge (short edge) of the scanner board in a second or different orientation relative to the scanner board. Rotation is shown in Fig. 8(a) and 8(d). The right edge of the scanner board shown in Fig. 8 is interpreted to be the first edge, and the edge of the document opposing that right edge in Fig. 8(a) is interpreted to be the second edge of the document.

Regarding claim 6, the repositioning step from Fig. 8(a) to Fig. 8(b) of Arai meets the claim limitation because linear translation is applied to the document so that the document is repositioned from one orientation (Fig. 8(a)) relative to the scanner board to another orientation (Fig. 8(b)) relative to the scanner board.

9. Claims 7-19 are allowed.

10. The following is an examiner's statement of reasons for allowance:

Claim 7 and its dependent claims 8-16 are allowable over Toyoda et al. (U.S. Patent No. 6,507,415) because Toyoda et al. does not disclose applying a transform to matched second and third image data to produce a transform image data and

combining the transform image data with first combined image data, which is produced by combining the first image data and the second image data, to produce a combined image data representing the document image of the large document. Although Toyoda et al. states that the number of scans of a large original is determined by the size of the original and the maximum size readable by the scanner, and thus is changed as needed for originals of different sizes (col. 11, lines 60-65), Toyoda et al. does not disclose applying a transform to produce a transform image data and combining the transform image data with already combined image data as claimed in independent claim 7.

Claim 17 and its dependent claims 18 and 19 are allowable over the closest prior art of record Toyoda et al. (U.S. Patent No. 6,507,415). Toyoda et al. discloses that the number of scans of the large original is not limited to two scans; the number of scans of an original is determined by the size of the original and the maximum size readable by the scanner (1) (col. 12, lines 60-65). However, Toyoda et al. does not teach or suggest that, when positioning the document in a third orientation, second shortest edge of the document lies adjacent the second longest edge of the image capture area, such that a third portion of the document corresponding the a second end of the document overlaps the image capture area. That is because, even in the case the large original is long that it needs three scans instead of two scans, in positioning the third portion of the document, Toyoda et al. rotates the document such that the second shortest edge of the document is adjacent the first longest edge of the image capture area, not the second longest edge of the image capture area as required by claim 17.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kamon et al. (U.S. Patent No. 6,002,492) discloses an image reading device (Fig. 6).

Kumashiro et al. (U.S. Patent No. 5,721,624) discloses an image reading apparatus for improving the joining state of a plurality of image data obtained by dividing and reading out an original image.

Yamaguchi et al. (U.S. Patent No. 4,882,630) discloses a printing apparatus and facsimile equipment.

Toyoda et al. (U.S. Patent No. 6,690,482) discloses an image forming method and an image forming apparatus (Figs. 2+).

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheukfan Lee whose telephone number is (703) 305-4867. The examiner can normally be reached on 9:30 a.m. to 6:00 p.m., Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward L. Coles can be reached on (703) 305-4712. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Cheukfan Lee
May 11, 2004


Cheukfan Lee